

05-290 Renewal of valve seat rings

Data

Overlap of valve seat rings in cylinder head 0.08–0.10

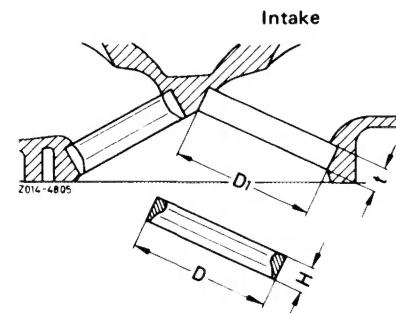
Intake Normal dimension Repair stage

D	<u>47.10</u> 47.09	Rough dimension 48.30
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D1	<u>47.00</u> 47.01	Max. up to 48.00
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t	<u>8.60</u> 8.70
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H	<u>8.60</u> 8.51
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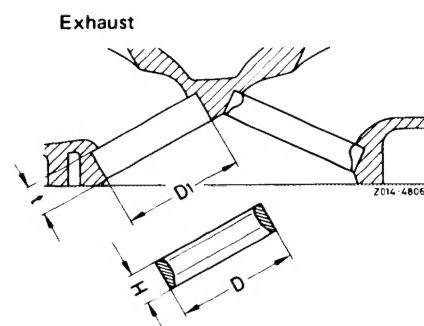
Exhaust Normal dimension Repair stage

	Version 1	Version 2 ¹⁾	Version 1	Version 2 ¹⁾
D	<u>40.10</u> 40.09	<u>42.10</u> 42.09	Rough dimension	
			41.3	43.3

D1	<u>40.00</u> 40.01	<u>42.00</u> 42.01	max. up to	max. up to
			41.00	43.00

t	<u>10.50</u> 10.60
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H	<u>10.50</u> 10.39
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¹⁾ Series (except emission-controlled engines) starting April 1978. Emission-controlled engines starting model year 1980.

Conventional tools

Plug gauge 9 mm dia. for intake and exhaust valve guide 116 589 08 21 00



Plug gauge 11 mm dia. for exhaust valve guide 116 589 09 21 00

Conventional tools

Cylinder head clamping device e.g. made by Christ, D-6801 Neckarhausen
order no. DBK 60-2

Ring seat machining tool e.g. made by Hunger, D-8000 München
size 2, order no. 220.03.110

Valve seat machining tool e.g. made by Hunger, D-8000 München
order no. 236.03.308, type VDSNL 1/45/30

Test set for valves e.g. made by Hunger, D-8000 München
order no. 216.93.300

Internal micrometer (range 25–60 mm)

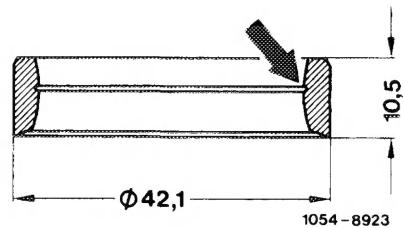
e.g. made by Mahr, D-7300 Esslingen
order No. 844

External micrometer (range 25–50 mm)

e.g. made by Mahr, D-7300 Esslingen
order No. 40 S

Note

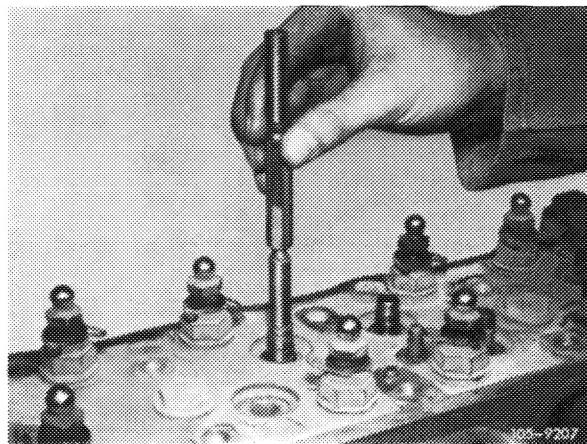
Exhaust valve seat rings for unleaded fuel with red or blue color dot on inside may be installed only in USA engines starting model year 1975. Starting model year 1980 these valve seat rings are identified by a machined groove (arrow).



Replacing

1 Unscrew old valve seat ring by means of ring seat machining tool.

2 Check valve guides, replacing if necessary (05–285).



3 Measure basic bore D1.

A new standard size valve seat insert can be used, if the specified overlap is given.

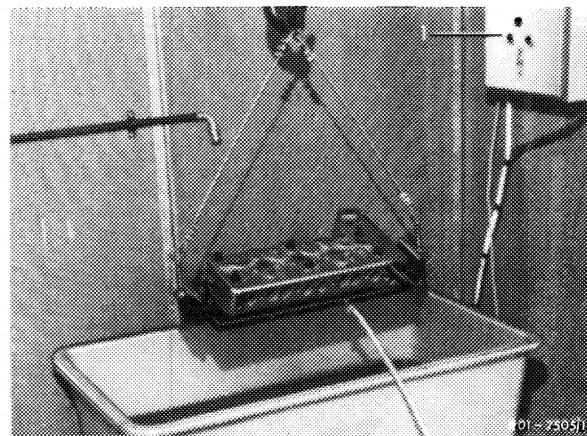
4 Machine basic bore repair stage D1 with ring seat machining tool in such a manner that bore is just cleaned.

5 Measure machined basic bore.

6 Provide specified overlap by machining the oversize valve seat inserts.

7 Heat cylinder head in water to approx. 80 °C (176 °F).

8 Undercool valve seat insert with fluid air.



9 Knock in valve seat insert with a pertinent mandrel.

10 Machine valve seats (05–291).

